

EXPLORING THE CONNECTION BETWEEN COLOR HUES AND THEIR PERCEIVED ECO-FRIENDLINESS USING GROCERY PRODUCTS

Ankit Grover
agrover@kth.se

Robin Witte
rwitte@kth.se

Gamal Sadek
gsadek@kth.se

Lennard Scheibel
lsche@kth.se

ABSTRACT

- This study investigates the impact of different color hues on people's perception of the eco-friendliness of grocery products (frozen peas, milk, olive oil) from Europe, Africa, and Asia. Product images were recolored in five different hues.
- Participants were asked to rank each recolored product using Likert Scale (0-5) based on their eco-friendliness perception.
- Analysis showed a statistically significant difference (**p-value 0.0029 < 0.05**) between the colors and their recorded eco-friendly scores. On average, a green hue received the highest score (**MedGRN = 2.33**), followed by blue and purple (**MedBLU = 2.11, MedPRP = 2.00**), while pink received a slightly lower score (**MedPNK = 1.8889**). Orange had the same average score (**MedORG = 2.00**) as purple, but had a slightly lower interquartile range.
- Given the RGB color model, this study indicates an association with higher perceived eco-friendliness for colors with a high green and blue channel. Our findings suggest that color hue alone is not enough to establish an eco-friendly perception practically.



Figure 1. Sample Product Color Variation

BACKGROUND

- Using green in retailer logos is perceived as more eco-friendly where red is not. [1]
- Color and their combinations can be used in different cultures in brand marketing. [2]
- Low saturation is perceived as more gentle and sustainable. [3]
- Cooler colors are perceived as healthier and more sustainable. [4]

METHOD

- Used OKLCH color space to select 5 different colors, while emphasizing low chroma and lightness.
- Surveyed a total of 44 participants
- Data analysis involved the Kruskal-Wallis H Test for non-normally distributed data.

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RESULTS

- The results, as depicted in figures below, reveal global perceptions of eco-friendliness associated with different colors across continents and products.
- Green stands out as the most eco-friendly rated color. While purple and orange show minimal divergence, green and blue, associated with eco-friendliness, exhibit higher medians.
- No discernible influence of product type on eco-friendliness perceptions is observed.
- Europe consistently rates colors as more sustainable, favoring green products, while Asia exhibits a more varied response.

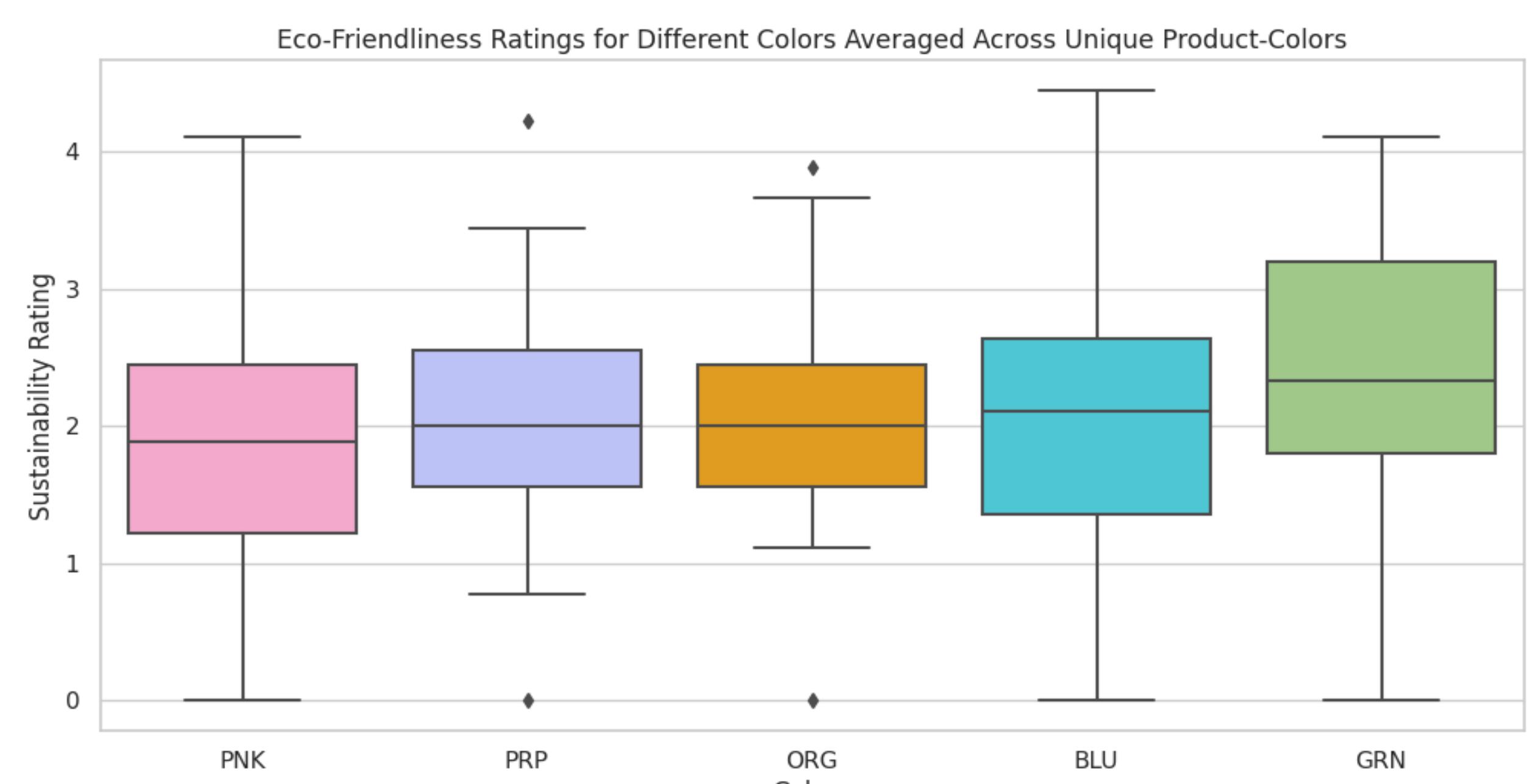


Figure 2. Global Sustainability Ratings For Different Colors Averaged

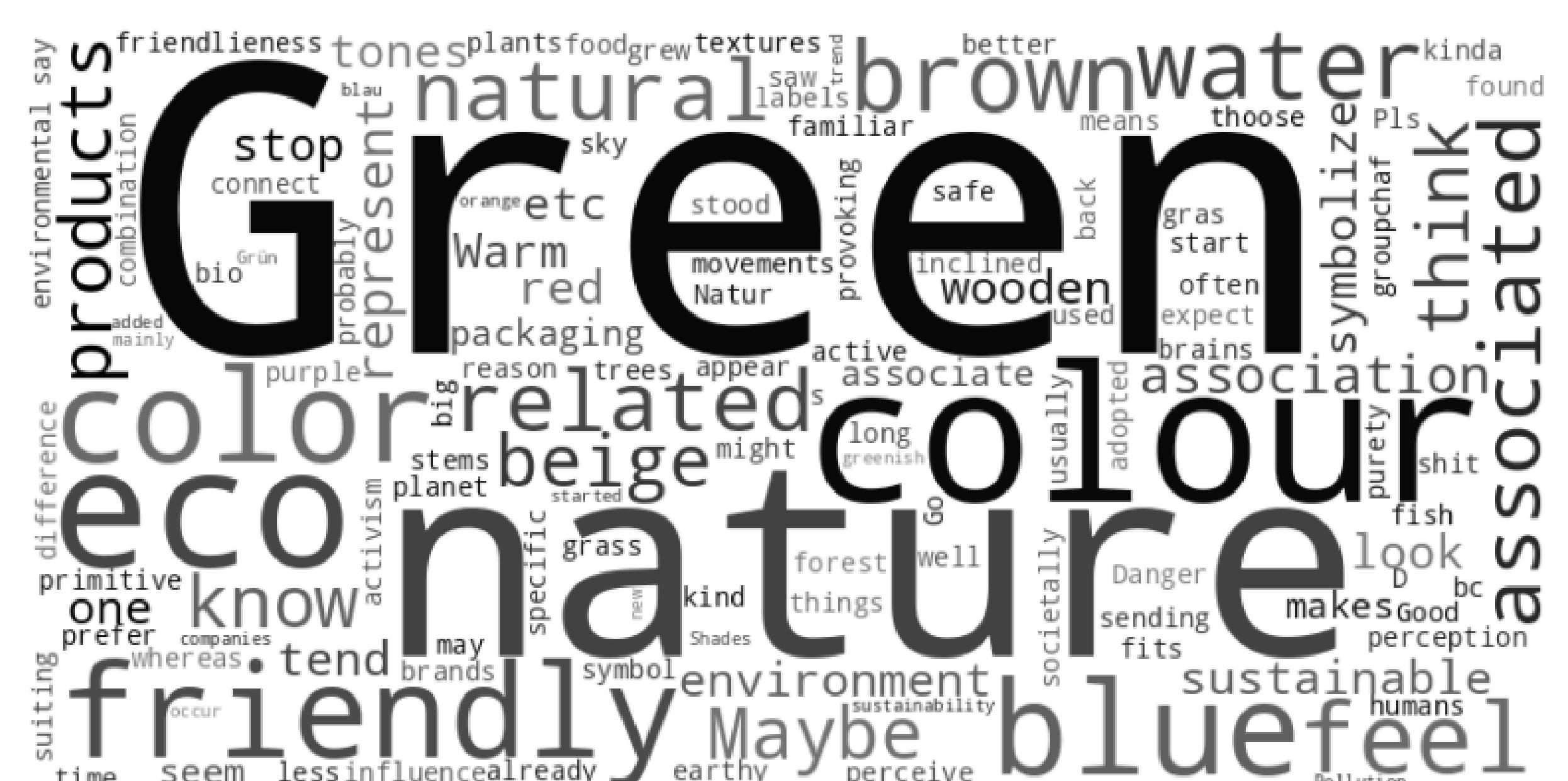


Figure 3. Word Cloud Of Qualitative Responses

CONCLUSION

The survey reveals some variations in perceived color sustainability, with green consistently rated as the most eco-friendly, particularly among European participants. Future research may delve into color lightness and holistic color values.



Figure 4. Color Channels Interaction

